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EXAMINER

RODEE, C

ART UNIT

PAPER NUMBER

1753

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Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademark

Office Action Summary

Application No.
09/361,803

Applicant(s)

Kunieda et al.

Examiner
Christopher RoDee

Group Art Unit
1753



☐ Responsive to communication(s) filed on _____

☐ This action is **FINAL**.

☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire three month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

Disposition of Claims

☒ Claim(s) 1-12 is/are pending in the application.

Of the above, claim(s) _____ is/are withdrawn from consideration.

☐ Claim(s) _____ is/are allowed.

☒ Claim(s) 1-12 is/are rejected.

☐ Claim(s) _____ is/are objected to.

☐ Claims _____ are subject to restriction or election requirement.

Application Papers

☒ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.

☐ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

☒ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☒ All ☐ Some* ☐ None of the CERTIFIED copies of the priority documents have been

☒ received.

☐ received in Application No. (Series Code/Serial Number) _____

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

☒ Notice of References Cited, PTO-892

☒ Information Disclosure Statement(s), PTO-1449, Paper No(s). 5 & 6

☐ Interview Summary, PTO-413

☒ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

— SEE OFFICE ACTION ON THE FOLLOWING PAGES —

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DETAILED ACTION

Election/Restriction

The Examiner contacted counsel and requested an election of a species of the formula (1) through (7) for the member's charge transport layer.

During a telephone conversation with Peter Saxon on 11 May 2000 a provisional election was made with traverse to prosecute the invention of formula (1), claims 1-4, 11, and 12 as they are limited to the species (1). During examination it was found that the species overlap noting that all of formula (2) through (7) are included within the scope of the formula (1) when the aromatic groups are substituted. Similarly, formula (3) is included within the scope of formula (2) when $Ar_{2,3}$ is substituted; formula (5) is included within the scope of formula (4) when $Ar_{4,3}$ is substituted, etc. Thus, the election requirement is withdrawn

Claim Rejections - 35 USC § 102 & 103

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

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(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-4, 7, 8, and 10 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Ueda in US Patent 5,376,487.

Ueda discloses in Example 1 an electrophotographic photosensitive member having a charge generation layer coated on a conductive support and a charge transport layer coated on the charge generation layer. The charge transport layer has a combination of aryl amine charge transport agents which have a maximum absorption wavelength of 500 nm. The reference discloses that the maximum absorption for the charge transport materials is in the range of 480-550 nm. Because of the absorption maximum at this wavelength, it appears that the charge transport layer would have higher transmittance at wavelengths outside the disclosed maximum/maxima (e.g., 380 nm or 400 nm) and would therefore meet the requirements of the claim at wavelengths

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within the permitted scope of semiconductor laser light. The compound used in amounts of 30 parts by weight is a substituted compound of the formula (1) and formula (4) and (5). It is also the same as compound 5-8 in the instant specification (p. 28). The compound used in amounts of 70 parts by weight meets the requirements of the formula (7). The compounds of the reference are mixed with polycarbonate Z (which is used in the instant specification to form the charge transport layer, p. 42). Because the reference's charge transport layer is formed from a compound disclosed as effective in the instant invention and a preferred polymeric binder it appears that the charge transport layer inherently meets the requirements of the instant claims.

When a reference discloses all the limitations of a claim except for a property and the Examiner cannot determine whether or not the function inherently possesses property which anticipate or render obvious the claimed invention but has reason to believe the property is present, it is proper to shift the burden of proof to applicants to establish whether or not the property is inherent. See *In re Fitzgerald*, 205 USPQ 594.

Claims 1-5 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over EP 686 878.

The EP document discloses in Example 1 a photoreceptor comprising a conductive support, a charge generation layer, and a charge transporting layer. The charge transporting layer is formed from a bisphenol Z polycarbonate and a charge

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transporting material which is the same as compound 2-5 in the instant specification, p. 23. This compound is a substituted triaryl amine meeting the requirements of formula (1) as well as formula (2). Because the reference's charge transport layer is formed from a compound disclosed as effective in the instant invention and a preferred polymeric binder it appears that the charge transport layer inherently meets the requirements of the instant claims.

When a reference discloses all the limitations of a claim except for a property and the Examiner cannot determine whether or not the function inherently possesses property which anticipate or render obvious the claimed invention but has reason to believe the property is present, it is proper to shift the burden of proof to applicants to establish whether or not the property is inherent. See *In re Fitzgerald*, 205 USPQ 594.

Claims 1-4, 7 and 9 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over EP 757 035.

The EP document discloses in the Examples 28-53 a photoreceptor comprising a conductive support, a charge generation layer, and a charge transporting layer. The charge transporting layer is formed from a substituted aryl amine of the claimed formula (1), as well as formulae (4) and (6), and is similar in structure to compound 6-51 (spec. p. 35) and a polycarbonate binder. Because the reference's charge transport layer is formed from a compound very similar in structure to those disclosed as effective in the

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instant invention and the same type of polymeric binder it appears that the charge transport layer inherently meets the requirements of the instant claims.

When a reference discloses all the limitations of a claim except for a property and the Examiner cannot determine whether or not the function inherently possesses property which anticipate or render obvious the claimed invention but has reason to believe the property is present, it is proper to shift the burden of proof to applicants to establish whether or not the property is inherent. See *In re Fitzgerald*, 205 USPQ 594.

Claims 1-5 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Nakata *et al.* in US Patent 5,510,218.

Nakata discloses in Examples 1-7 a bilayer photoreceptor having a conductive support, a charge generation layer, and a charge transport layer where the charge transport layer contains a polycarbonate resin and a charge transport compound which is the same as or very similar to compound (2-22) in the instant specification. These compounds meet the requirements of Formula (1) as having a substituted aromatic group as well as formula (2).

Because the reference's charge transport layers are formed from compounds disclosed as effective in the instant invention, or very similar to such compounds, and a

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preferred polymeric binder it appears that the charge transport layer inherently meets the requirements of the instant claims.

When a reference discloses all the limitations of a claim except for a property and the Examiner cannot determine whether or not the function inherently possesses property which anticipate or render obvious the claimed invention but has reason to believe the property is present, it is proper to shift the burden of proof to applicants to establish whether or not the property is inherent. See *In re Fitzgerald*, 205 USPQ 594.

Claims 1-6 are rejected under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Suzuki *et al.* in US Patent 5,837,412.

Suzuki discloses in the Examples a bilayer photoreceptor having a conductive support, a charge generation layer, and a charge transport layer where the charge transport layer contains a polycarbonate resin and a charge transport compound. The charge transport compounds meet the requirements of the instant formula and certain compounds (e.g., CT-19; Ex. 4 & Ref. Ex. 4) is the same as compound (3-2) in the instant specification. These compounds meet the requirements of Formula (1) as having a substituted aromatic group and formulae (2) and (3).

Because the reference's charge transport layers are formed from compounds disclosed as effective in the instant invention, or very similar to such compounds, and a

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preferred polymeric binder it appears that the charge transport layer inherently meets the requirements of the instant claims.

When a reference discloses all the limitations of a claim except for a property and the Examiner cannot determine whether or not the function inherently possesses property which anticipate or render obvious the claimed invention but has reason to believe the property is present, it is proper to shift the burden of proof to applicants to establish whether or not the property is inherent. See *In re Fitzgerald*, 205 USPQ 594.

Claims 1-4, 11, and 12 are rejected under 35 U.S.C. 103(a) as obvious over Pai *et al.* in US Patent 6,025,102 in view of *Organic Photoreceptors for Imaging Systems*, to Borsenberger, pp. 330-338.

Pai discloses a photoreceptor having a conductive support, a charge generation layer, and a charge transporting layer. The charge transporting layer components (first and second charge transporting compounds) are selected so that the final charge transport layer is transparent to radiation in the range of exposure, which is suggested as 400 to 800 nm. The charge transporting layer contains compounds which are free of long chain alkyl carboxylate groups (first charge transport compounds) such as those given by the formula in column 12, line 35, forward. These compounds are substituted arylamines according to the formula (1).

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Borsenberger teaches well known perylene charge generation pigment that are sensitive to wavelengths in the 400 to 500 nm range (see Figures 13 and 14). This reference specifically states that the compounds have sensitivity such as at 500 nm (p. 331 & 335).

The Office takes Official Notice that the claimed process cartridge and electrophotographic apparatus are well known in the art. Such devices with the claimed means are exceedingly well known.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to choose charge transporting compounds which are not absorbing at wavelengths such as from 400 to 500 nm because Pai teaches that the charge transport layer should not be absorbing in the portion of the 400 to 800 nm wavelengths where the charge generation compound absorbs while Borsenberger teaches that well known charge generation materials such as perylene absorb in the 400 to 500 nm range. Thus, in order to practice the invention suggested by Pai with perylene charge generation materials, which absorb in the area of the spectra taught as desirable by Pai, the artisan would select substituents for the first charge transporting compound so that the compound does not absorb or minimally absorb in the spectra of the perylenes. The artisan would have found it obvious to use the obvious photoreceptor in a process cartridge or electrophotographic apparatus because this permits the artisan to automate the copying process for home or office settings. The artisan would have

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found it obvious to match the exposure source in the device or apparatus to the sensitivity of the photogenerator to obtain maximum charge generation effect.

Claims 11 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakata *et al.* in US Patent 5,510,218 or EP 757 035 or Ueda in US Patent 5,376,487, each in view of Pai *et al.* in US Patent 6,025,102 and further in view of *Organic Photoreceptors for Imaging Systems*, to Borsenberger, pp. 330-338.

Each of the references was described above.

The primary references do not disclose the claimed device or electrophotographic apparatus. As above, the Office takes Official Notice that the claimed process cartridge and electrophotographic apparatus are well known in the art.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the disclosed photoreceptors in a process cartridge or electrophotographic apparatus because this would allow the artisan to automate the production of images as is commonly and commercially performed in the art. The artisan would have found it obvious to use an exposure source (e.g., laser) that emits at the wavelengths where the charge transport material does not absorb because this would permit the maximum amount of light energy to travel to the charge generator. The art, such as Pai, suggests this expedient. Further, the primary references suggest the charge generators of the same type as Borsenberger (e.g., Nakata col. 9, l. 11-12;

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Ueda col. 6, l. 48-49; EP '035 p. 20, l. 30 - CG3) which Borsenberger teaches as being sensitive in the range of 400 to 500 nm. Thus the artisan would choose a well known exposure source, such as semiconductor lasers, to use the charge generators at optimum effect.

Information Disclosure Statement

The Examiner notes the extensive citation of art. It is believed that the closest art has been applied. Although additional rejections over other art of record are possible these would appear to be redundant based upon the evidence of record.

Conclusion

Any inquiry concerning this communication should be directed to Exr. Christopher RoDee at telephone number 703 308-2465 or via the receptionist at 703 308-0661 for general or status inquiries. Submissions by fax (see 1096 OG 30) may be accepted at the following telephone numbers:

Unofficial fax: 703 305-6078
Official fax: 703 305-7718
After Final fax: 703 305-3599


CHRISTOPHER D. RODEE
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cdr
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